

REMARKS

This is in response to the Office Action mailed February 12, 2007. As an initial matter, Applicant disagrees with the Examiner's contention that its last amendment necessitated a new ground of rejection and a final action. Specifically, the Examiner argues that amended Claim 1 requiring the simultaneous connection of the drive pumps to the motor was previously not presented for examination. The last amendment to claim 1 is set forth below:

1. *(Currently amended) An apparatus for mixing liquid decontaminants and dispensing a foam-based or liquid-based decontaminant, said apparatus comprising:*

a plurality of tanks capable of containing liquids;

a pump assembly having

a plurality of pumps, wherein each pump is in communication with a respective tank, and each pump has a respective drive assembly;

a motor connected to at least more than one of said drive assemblies such that said motor engages said connected drive assembly and further drives any other connected drive assemblies at the same time; and

a manifold in communication with said plurality of pumps and said plurality of tanks, said manifold capable of mixing liquids from said plurality of tanks;

wherein said plurality of pumps are capable of drawing liquids from said plurality of tanks in defined ratios through said pumps to said manifold for mixing and dispensing.

Applicant notes that Claim 10 as originally presented (i.e., as filed) reads as follows:

10. An apparatus according to Claim 8, wherein said pump assembly further comprises:

a plurality of couplings connecting each of said drive assemblies of said plurality of pumps; and

a motor connected to one of said drive assemblies such that said motor engages said one drive assembly to thereby drive each of said drive assemblies.

Applicant contends that the simultaneous connection of the drive assemblies to the motor was previously presented in Claim 10. Specifically, Claim 10 sets forth that the couplings connect each drive assembly (see lines 3-4) and that the motor connected to one drive assembly necessarily drives any connected drive assembly (see lines 5-6). Thus, Applicant requests that the Examiner reconsider the finality of the last office action.

Amendments

Applicant is amending Claims 1, 10, 12, 15, and 25.

Applicant amends independent Claim 1 to recite a plurality of couplings positioned between the pumps, wherein the couplings connect each of the drive assemblies of the pumps. In other words, Applicant has incorporated the subject matter of Claim 10 into independent Claim 1. Applicant further amends Claim 1 to recite that the motor is secured to one end of one of the pumps. Claim 1 is also amended to further define that the manifold mixes liquids. These features are not disclosed, suggested, or taught by the prior art.

Applicant also amends dependent Claim 10 to delete reference to the couplings now incorporated into independent Claim 1.

Applicant amends dependent Claim 12 to further define that the manifold also dispenses liquid from one of the tanks independent of the other tanks.

Applicant also amends independent Claim 15 to recite that the first coupling is positioned immediately between the first and second pumps such that the first coupling connects the drive assembly of the first pump directly to the drive assembly of the second pump. Applicant further amends Claim 15 to specify that the motor is connected solely to the drive assembly of the first pump such that the motor engages the drive assembly of the first pump to thereby drive the first coupling and the drive assemblies of the first and second pumps.

Applicant submits that the specification and drawings as filed supports these amendments (see Specification, paragraphs 56-58, and Figures 3 and 5).

Further, in accordance with the Examiner's request, claim 34 previously listed as "withdrawn" is now "cancelled."

The Examiner's Interpretation of Claim 12

The Examiner argues that language in Claims 1 and 12 reciting that the manifold is "capable of mixing liquids" (see Claim 1) and "capable of dispensing liquid from one tank independent of the other tanks" (see Claim 12, misidentified by Examiner as Claim 11, see Action, p. 2) does not structurally limit or further define the manifold itself. Accordingly, Applicant has amended Claims 1 and 12 to state that the manifold mixes liquids from the plurality of tanks and also dispenses liquid from one tank independent of the other tanks. Applicant submits that the present amendments to Claims 1 and 12 further define the manifold.

The Examiner's Rejections

Applicant acknowledges that it has overcome the rejection of Claims 1 and 10 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 4,234,007 to Titone. Applicant further acknowledges that it has overcome the rejection of Claims 1-2, 4-7, 9, and 12 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,980,836 to Moffett.

In the latest action, the Examiner rejects Claims 1, 12, and 15 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 3,250,218 to Sinclair. The Examiner further rejects Claims 2-7, 10, 11, 13, 14, 16-21, 25-33 under 35 U.S.C. §103(a) as being unpatentable over Sinclair, either alone, or in combination with U.S. Patent No. 5,980,836 to Moffett, U.S. Patent No. 3,957,203 to Bullard, or U.S. Patent No. 3,074,649 to Atkinson.

In response to the Examiner's above-referenced rejections, Applicant submits amended claims and addresses the Examiner's concerns herein below.

The Amended Claims Are Not Anticipated by Sinclair

The Examiner rejects Claims 1, 12, and 15 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 3,250,218 to Sinclair. The Examiner alleges that Sinclair discloses a plurality of tanks, feed lines 1a and 1b, a plurality of pumps 2a and 2b, a motor 9 connected to more than one of the drive assemblies (i.e., a motor 32, a variable gear box 12, and a fixed gear box 13) connected at the same time to each pump, and a manifold mixer line 8. The Examiner further alleges that the motor 9 drives one drive assembly 13 and the other drive assembly 12 at the same time when connected to the motor. Finally the Examiner argues that the manifold is capable of functioning to dispense liquid from one tank independent of the other tank at line 29a or 29b and also capable of mixing fluids when both lines are connected at 8. Applicant respectfully

disagrees with the Examiner's assessment of the present invention and the blending apparatus as disclosed by Sinclair for the reasons set forth below.

As amended, Claim 1 now recites a plurality of couplings that are positioned between the pumps and that connect each of the drive assemblies of the pumps. Amended Claim 1 further recites that the motor is secured to one end of one pump. Applicant points out that Sinclair fails to incorporate a coupling positioned between the pumps, wherein the coupling is connected to each of the drive assemblies. Rather, Sinclair discloses a variable gear box 10 and a fixed gear box 11 operated by motors 9 and 33, wherein fixed gear box 11 is connected to pumps 2a and 2b by a variable gear box 12 and a fixed gear box 13. Sinclair further discloses a motor 32 capable of driving gear box 12.

As configured, Sinclair fails to disclose couplings positioned immediately between the pumps, wherein the couplings connect each of the drive assemblies of the pumps. Rather, Sinclair relies upon plural motors connected to the pumps through a series of multiple variable and fixed gear boxes physically separated from the motors and pumps.

Moreover, Sinclair fails to disclose a motor secured to an end of one of the pumps. Rather, Sinclair incorporates multiple motors 9, 33, and 32, wherein motor 9 controls the overall operation of the apparatus, and motors 32 and 33 operate in response to signals emanating from a viscosity meter 14 and a flow meter 16, respectively.

Thus, Sinclair neither requires nor suggests couplings positioned immediately between the pumps such that the couplings—single devices—connect the drive assemblies of each pump. Nor does Sinclair require or suggest a motor directly connected to one end of one of the pumps. As a result, the device disclosed by Sinclair does not contain couplings or a motor disclosed in the present application. Therefore Sinclair fails to disclose each and every element of the present invention and must be removed as a 35 U.S.C. §102(b) reference against Claim 1.

With respect to Claim 12, the Examiner argues that the manifold of Sinclair functions to dispense liquid from one tank independent of the other tanks at line 29a or 29b, and mixes fluids together when both lines are connected at 8. Applicant submits that Sinclair fails to disclose operation of the system wherein liquid is dispensed from one tank independent of the other tank. Specifically, Sinclair addresses the problem of blending “pump oils of different character from various containers into a single output pipe to dispense a blend oil of a desired composition” (see Sinclair, column 1, lines 18-20). Sinclair makes no reference to dispensing pump oil from one tank. As set forth, Sinclair teaches that the common outlet pipe 3 is used for dispensing blended oil (see Sinclair, column 3, lines 59-60).

The Examiner assumes that the apparatus of Sinclair will function to dispense liquid from one tank if the valves 7a and 7b are manipulated to prevent the flow of oil from one of the pumps. As taught by Sinclair, initial operation of the apparatus requires that valve 7a be adjusted to allow fluid to flow from pipe 4a through one-way valve 5a and flow meter 6a into pipe 29A, but not into mixing chamber 8 (see Sinclair, column 4, lines 20-23). Similarly, Sinclair requires that valve 7b be adjusted to allow fluid to flow from pipe 4b through one-way valve 5b and flow meter 6b into pipe 29B, but not into mixing chamber 8 (see Sinclair, column 4, lines 23-26). No reference is made to an adjustment of valves 7a and 7b to permit dispensing of liquid from one tank independent of the other tank.

In further operational detail, the pumps of Sinclair are started and the flow meters 6a and 6b are checked to ensure that equal amounts of oil are being pumped through pipes 4a and 4b (see Sinclair, column 4, lines 26-28, and Figure 1). Valves 7a and 7b are then adjusted so that all flow through pipes 29a and 29b is stopped and the oil pumped through pipes 4a and 4b flows into the mixing chamber 8. Again, Sinclair makes no reference to dispensing oil from one tank through outlet pipe 3.

Bypass valves 27a and 27b are provided in the event that flow rate in outlet pipe 3 is suddenly decreased and the pressure in the system rises to a dangerous level in a short period of time before the flow meter 16 acts to control the variable speed gear box 10 so that the action of pumps 2a and 2b is sufficiently diminished (see Sinclair, column 4, lines 65-74). Still, Sinclair makes no reference to the dispensing of oil from one tank through outlet pipe 3. Contrary to the Examiner's assertion that valves 7a and 7b may be configured to dispense oil from one tank, the valves 7a and 7b are provided to regulate the pressure of the oil circulating throughout pipes 29a and 29b. Accordingly, the device disclosed by Sinclair does not contain a manifold permitting the dispensing of fluid from one tank independent of the other tanks of the type disclosed in the present application. Therefore Sinclair fails to disclose each and every element of the present invention and must be removed as a 35 U.S.C. §102(b) reference against Claim 12.

Referring to amended Claim 15, Applicant now recites that the first coupling is positioned immediately between the first and second pumps such that the first coupling connects the drive assembly of the first pump directly to the drive assembly of the second pump. Sinclair fails to disclose a coupling between the first and second pumps. Instead, Sinclair discloses a number of fixed and variable gear boxes and motors that may operate each pump independently depending upon input from the viscosity meter 14 and flow meter 16. As amended, Claim 15 further recites that the single motor is connected solely to the drive assembly of the first pump. Sinclair fails to disclose a motor connected solely to the drive assembly of a pump. As configured, the present motor engages the drive assembly of the first pump to thereby drive the first coupling and drive assemblies of the first and second pumps.

Therefore Sinclair fails to disclose each and every element of the present invention and must be removed as a 35 U.S.C. §102(b) reference against Claim 15.

The Claims are not Obvious in View of Prior Art

The Examiner further rejects Claims 2-7, 10, 11, 13, 14, 16-21, 25-33 under 35 U.S.C. §103(a) as being unpatentable over Sinclair, either alone, or in combination with U.S. Patent No. 5,980,836 to Moffett, U.S. Patent No. 3,957,203 to Bullard, or U.S. Patent No. 3,074,649 to Atkinson.

Sinclair

With respect to Claims 10 and 11, the Examiner alleges that Sinclair discloses all of the recited subject matter except for the drive assembly being coaxially aligned, the pump being a diaphragm pump, and a third pump in connection with a second coupling. With respect to Claim 25, the Examiner alleges that Sinclair discloses the “coupling” of two pumps and two sources in contrast to three pumps and three sources as claimed. In this instance, the Examiner uses the term “coupling” as a verb as opposed to a noun as recited in the present claims.

With respect to Claims 10 and 11, Applicant has incorporated the couplings into independent Claim 1 and submits that Sinclair fails to disclose a “coupling” positioned between the pumps, wherein the coupling is connected to each of the drive assemblies. Applicant notes that commercially available dictionaries define a “coupling” (i.e., a noun as used in Claims 1 and 15) as a device that serves to connect the ends of adjacent parts or objects. See Merriam-Webster Online Dictionary at www.m-w.com. In this instance and in the claims, Applicant uses the term coupling as a noun as opposed to a verb (as interpreted by the Examiner). Sinclair fails to disclose a device that connects the ends of adjacent parts, and therefore does not disclose a coupling claimed in the present invention.

As set forth above, Sinclair teaches a blending system having two pumps that operate cooperatively in response to the viscosity meter 14 and flow meter 16 (see Sinclair, Figure 1). Specifically, viscosity meter 14 controls the setting of the gear ratio

in variable gear box 12 through connection 15. Further, gear box 12 operates pump 2a. Flow meter 16 controls the setting of the gear ratio in variable gear box 10 through connection 17. Gear box 10 operates fixed gear box 13 which operates pump 2b. By incorporating multiple fixed and variable gear boxes connected to two pumps, wherein the gear boxes are driven by multiple motors, Sinclair fails to teach (1) a plurality of couplings positioned between the pumps, wherein the couplings connect each drive assembly, and (2) a motor secured (i.e., attached) to one end of one of the pumps (see Figures 1-3 and 5).

Referring to Claim 25, the Examiner argues that Sinclair discloses “the coupling” (i.e., a verb) of two pumps and two sources, in contrast to three pumps and three sources as claimed in the present invention. The Examiner then argues that it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide an additional pump, supply line tank, and gear 11 in connection to the motor 9 so as to expand the operation to mix three sources together. As set forth above, Sinclair fails to disclose, teach, or even suggest a coupling device that connects ends of the adjacent drive assemblies of the pumps, nor does it teach a motor directly affixed to one end of one of the pumps.

Accordingly, Sinclair fails to disclose, teach, or suggest an apparatus incorporating a coupling placed between two pumps and a motor connected to one end of one of the pumps and therefore must be removed as a §103(a) reference.

Sinclair and Moffett

With respect to Claims 2-7, 16-21, and 28, the Examiner argues that Sinclair discloses all of the recited subject matter with the exception of having a drain. The Examiner then notes that the pumps of Sinclair are fully capable of operating to fill the assembly and include a heater. Applicant submits that Sinclair makes no such reference to a heater. The Examiner then alleges that because Moffett teaches a system having

plural tanks for mixing solutions, plural pumps, a drain, and a heater, it would have been obvious to one of ordinary skill in the art to provide a drain, heater, and connections “so that the device of Moffett [sic] may be flushed and drained to provide a cleaning of the system” (see Office Action, p. 6; emphasis added). Applicant notes that the Examiner is likely referring to Sinclair as opposed to Moffett in this instance.

For the reasons set forth above, Applicant submits that Sinclair is an improper reference and should not be combined with Moffet, or any other patent cited herein. In particular, Sinclair fails to disclose, teach, or suggest an apparatus incorporating in one embodiment of the present invention (1) a plurality of couplings that are positioned between the pumps and that connect each of the drive assemblies of the pumps, and (2) a motor secured to one end of one of the pumps (see amended Claim 1). Sinclair further fails to disclose, teach, or suggest an apparatus incorporating in another embodiment of the present invention (1) a first coupling positioned immediately between the first and second pumps such that the first coupling connects the drive assembly of the first pump directly to the drive assembly of the second pump and (2) a single motor connected solely to the drive assembly of the first pump such that the motor engages the drive assembly of the first pump, and then drives the first coupling and the drive assemblies of the first and second pumps (see amended Claim 15).

The Examiner alleges that Moffett discloses a liquid mixing device capable of mixing any desired liquid having solution tanks 10, 12, 14, 16; pump assemblies 68, 36, 44, 24, 102, 84; a manifold 20, 52, 76, 78, 20, 20A, 78, 78A, 76, 76A, 78, and 106; and a drain assembly. The Examiner further alleges that Moffett discloses conduits and couplings to attach the conduits to the tanks, pumps, valves, and drains. Still further, the Examiner argues that the tank 16 may be heated. Applicant respectfully disagrees with the Examiner’s assessment of Moffett for the reasons set forth below.

Moffett discloses an apparatus for preparing low concentration polysilicate microgels that includes a number of reservoirs 10, 12, 14; a number of pump assemblies

68, 36, 44, 24, 102, 84; and a number of manifolds 20, 52, 76, 78 (see Moffett, Figure 1), 20, 20A, 78, 78A, 76, 76A (see Moffett, Figure 2), 78, 106, 20 (see Moffett, Figure 3).

Applicant submits there is no motivation to combine the drain or alleged heater of Moffet with the apparatus of Sinclair. First, Sinclair makes no reference to, nor suggests, a requirement that the oil be drained from any lines. Sinclair drains the system via the outlet pipe 3. Second, Sinclair makes no reference to, nor suggests, a requirement to heat the oil. Moreover, Sinclair provides the oil industry with an apparatus for blending oil to a desired composition. Sinclair is an alternative to batch blending and provides a means for varying the rate of flow of the oil during blending operations. Further, Sinclair addresses backpressure concerns by providing a means for counteracting the effect of backpressure in the system when flow in the outlet pipe is reduced by providing bypass valves and diaphragm chambers.

In contrast, Moffett provides the papermaking industry with an apparatus for producing microgels from water soluble silicate and a strong acid. The polysilicate microgels produced according to Moffett are particularly useful in combinations with water soluble cationic polymers as a drainage and retention aid in papermaking (see Moffett, column 1, lines 44-47). Moffett provides no incentive to one skilled in the art of the oil industry to select features of an apparatus used in the papermaking industry. Thus, each patent incorporates distinctive features and addresses distinctly different problems (i.e., blending oil of different compositions and producing microgels used in papermaking).

In view of the structural distinctions between the present invention and the cited references, Applicant submits that combining Sinclair with Moffett in a way that renders the present invention obvious relies on impermissible hindsight. The Examiner has failed to consider that he is not necessarily one of ordinary skill in the art. Rather, the Examiner is vastly more knowledgeable than one of ordinary skill because the Examiner—in his role as a Patent Examiner—is exposed to a wider variety of art than one of ordinary skill.

Accordingly, Sinclair taken either individually or in combination with Moffet, does not teach or suggest an apparatus for mixing and dispensing decontaminants having a plurality of tanks, a plurality of pumps connected by couplings that connect the drive assemblies of the pumps, a motor secured to one end of one pump, and a manifold, wherein the motor engages the drive assembly of one pump to thereby drive the coupling and drive assemblies of other pumps.

Sinclair, Bullard, and Atkinson

With respect to Claims 13, 14, 26, 27, and 29-33, the Examiner argues that Sinclair discloses all of the recited subject matter as defined within the scope of the claims with the exception of the system being mounted on a vehicle or mobile platform with a cab, boom, or basket and a nozzle. According to the Examiner, Bullard allegedly teaches that a mixed fluid material supplied in a tank may be provided upon a mobile platform 12. Atkinson supposedly teaches that a fluid delivery system from a tank 9, boom 3, and nozzle 1 may be operated from a cab 53. In sum, the Examiner argues that it would have been obvious to one of ordinary skill in the art to provide the mixing device of Sinclair with a mount upon a vehicle or mobile platform with a cab, boom, or basket and nozzle for the mixer tank device of Moffett so that the mixed fluid may be easily transported and delivered to a particular location. Applicant respectfully disagrees with the Examiner's assessment of the blending apparatus as disclosed by Sinclair, and the alleged mobile platform as disclosed by Bullard.

As noted above, Sinclair fails to disclose an apparatus having (1) a plurality of couplings that are positioned between the pumps and that connect each of the drive assemblies of the pumps, or (2) a motor secured to one end of one of the pumps (see amended Claim 1). Nor does Sinclair disclose (1) a first coupling positioned immediately between a first and second pump such that the first coupling connects the drive assembly of the first pump directly to the drive assembly of the second pump, or (2) a single motor

connected solely to the drive assembly of the first pump such that the motor engages the drive assembly of the first pump, and then drives the first coupling and the drive assemblies of the first and second pumps (see amended Claim 15). Thus, Sinclair is improper and should not be combined with Bullard or Atkinson.

Neither Bullard nor Atkinson disclose these features of the present invention, and thus Sinclair, taken either individually or in combination with Bullard and/or Atkinson, still fails to teach or suggest the components of the claimed invention.

Further, Applicant continues to submit that the platform of Bullard is a truck bed forming an integral part of the vehicle frame (see Bullard, Column 2, Lines 32-33). In contrast, the present invention includes a wheeled platform 54 releasably secured to, and not integral with, the vehicle frame. As constructed, Bullard fails to teach the use of a platform secured to, yet distinct from, a vehicle (see Figures 7 and 8).

For the reasons stated above, Sinclair fails to stand as proper prior art, and taken either individually or in combination with Bullard and Atkinson, does not teach or suggest a mobile decontamination module comprising (1) tanks, a first pump having a drive assembly, a second pump having a drive assembly, a coupling connecting the drive assemblies of the first and second pumps, and a motor connected to the drive assembly of the first pump, such that the motor engages the drive assemblies of the first and second pumps or (2) a wheeled platform that supports tanks, pumps, drive assemblies, and a manifold, wherein the platform is a separate and distinct component apart from the vehicle (i.e., not integral with the vehicle).

In view of the structural distinctions between the present invention and the cited references, Applicant submits that combining Sinclair—either alone or in combination with—Bullard and Atkinson in a way that renders the present invention obvious relies on impermissible hindsight.

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Withdrawn Claim 34 is Now Cancelled

In accordance with the Examiner's request, claim 34 previously listed as "withdrawn" is now "cancelled."

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CONCLUSION

Based on foregoing amendments and arguments, Applicant submits that pending Claims 1-7, 10-21, and 25-33 are now in immediate condition for allowance, and the same is respectfully requested. Presently, there are 28 pending claims in this application; thus, Applicant believes that there are no additional fees due associated with this amendment. Nevertheless, the Commissioner is authorized to charge any additional fee, or credit any refund, to Deposit Account No. 50-0332.

Respectfully submitted,

//Jesse B. Ashe, III//

Jesse B. Ashe, III
Registration No. 44,513

Enclosures
021176
Summa, Allan & Additon, P.A.
11610 North Community House Road
Suite 200
Charlotte, NC 28277-2162
Telephone: 704-945-6703
Facsimile: 704-945-6735
File No.: 1225.14